



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,210	12/04/2003	David Herbert Roach	CL2248USNA	7968

23906 7590 08/17/2005

E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

ASHTON, ROSEMARY E

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/728,210

Applicant(s)

ROACH ET AL.

Examiner

Rosemary E. Ashton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 15-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 13-22 is/are rejected.
- 7) ☒ Claim(s) 8,10-12,23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/26/04, 1/3/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I, with traverse in the reply filed on 7 June 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Information Disclosure Statement***

2. The information disclosure statement filed 3 January 2005 cites a German reference DD 234 196. Only the abstract is in German and has been considered. The text of the patent is not in German (see enclosed first page) and has not been considered.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.  
  
Both claims have **metal/metalloid alloys**. Claim 1 also has them as separate reagents. Does the use of the backslash "/" mean they are separate reagents (metal and metal alloys) or a mixture of the two reagents.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7, 16, 17-19, 23 rejected under 35 U.S.C. 102(e) as being anticipated by Imai et al., publication number US 2002/0094382, cited on applicant's IDS filed 3 January 2005.

Art Unit: 1752

Sections 142-148 teach a positive imageable, particulate filled photoresist composition. The particulate is a silver powder with a particle size of 1 micron as in claims 2,4,5,16,17.

The composition is an aqueous or organic solvent based printable paste (section 103, Figure 1,2) that can be made in a film (section 95) as in claims 14,18,19.

Other particulates are iron, aluminum, copper, zinc, lead, bismuth, alloys and oxides of these metals, such as aluminum oxide (section 42,43) as in claims 2-7.

The composition is used to make a display panel (section 2) which is a lighting device as in claim 23.

7. Claims 1-5,7,13-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanabata et al. patent no. 6,534,235.

The patent teaches a positive photoresist composition comprising a polymer having acid labile groups, a solvent and particulates.

The polymer is a homo or copolymer of a polyvinylphenol resin comprising acid labile groups that protect alkali soluble groups (col. 7, lines 42-53). The acid labile groups are exemplified in col. 8, lines 33-52) such as tetrahydropyrane (THP) and t-butyl as in claim 13. A THP group replacing the hydroxyl hydrogen atom of vinylphenol is THP p-vinylbenzoate as in claim 13.

The particulates are inorganic particles with a size of 1 to 1000 nm (col. 10, lines 35-39) such as metals of silver, copper, aluminum, oxides such as tin oxide (col. 10, lines 9-29).

8. Claims 1-7,9,14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanabata patent no. 6,653,043.

In example 1, col.13, the patent teaches a positive photosensitive composition comprising a novolac-diazonaphthoquinone photopolymer system, solvent and a particulate carrier, which may be a metal such as silver, copper, aluminum, zinc and metal oxides such as tin oxide (col. 3, lines 17-67).

The particulate carriers accelerate solubilization of the exposed portions in developer (col. 13, lines 26-36. See claims 11-13,16,21,22 in Hanabata.

Art Unit: 1752

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 20,21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al., patent no. 6,769,945 in view of Imai et al. cited above.

Chang teaches making a triode structure of a field emission display by photolithographically patterning a conductive paste comprising a metal powder such as a mixture of Fe, Ni and Co (col. 4, lines 7-32, abstract).

It is coated on a substrate and thus becomes a conductive film.

Chang does not teach the composition is a positive imageable photoresist composition comprising a photopolymer system.

As shown above Imai teach conductive paste comprising a positive imageable, particulate filled photoresist composition having a photopolymer system. The particulates are iron, aluminum, copper, zinc, lead, bismuth, alloys and oxides of these metals, such as aluminum oxide (section 42,43) as in claims 2-7.

The conductive paste composition is patterned photolithographically.

It would have been obvious to one of ordinary skill in the art to use the conductive paste of Imai for the conductive paste in the invention of Chang with a reasonable expectation of obtaining a pattern because both Imai and Chang teach the composition are photolithographically patternable to form a conductive pattern.

11. Claims 8,10-12,23,24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1752

12. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach the photoimageable composition has carbon nanotubes, a resin as in claims 10-12 or lighting device or vacuum electronic device using the composition.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosemary E. Ashton whose telephone number is 571-272-1326. The examiner can normally be reached on Mon-Fri, 11:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rosemary E. Ashton  
Primary Examiner  
Art Unit 1752

August 14, 2005

**ROSEMARY ASHTON**  
**PRIMARY EXAMINER**